



Appl. No. 10/788,487  
Amendment dated September 11, 2006  
Reply to Final Office Action of August 11, 2006

566.43577X00

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listing of claims in the application.

**Listing of Claims:**

1-12. (Canceled)

13. (Currently Amended) In a computer system which includes a plurality of storage subsystems ~~being sequentially concatenated to a host computer,~~ and which performs a remote copy between two or more of said storage subsystems,

a first storage subsystem comprising:

an interface which receives a status information acquisition command and which sends status information from the first storage subsystem to a second storage subsystem that is located on a nearer side of the first storage subsystem relative to ~~the~~ a host computer and is connected to the first storage subsystem, said status information including a copy progress rate, which indicates a concordance rate of data between a first logical volume and a second logical volume of said first storage subsystem ~~or~~ and at least one third storage subsystem that is located on a farther side of the first storage subsystem relative to the host computer, said copy progress rate being used to determine, by said host computer, which of at least one of a plurality of status information acquisition command routes is displayed on said host computer, said status information acquisition command routes being routes on which



Appl. No. 10/788,430  
Amendment dated September 11, 2006  
Reply to Final Office Action of August 11, 2006

566.43577X00

a status information acquisition command is relayed via one or more of said plurality of storage subsystems;

an outgoing status information storage unit which stores said status information to be sent to said second storage subsystem;

a target storage subsystem judgment unit which judges whether a target storage subsystem identified in the status information acquisition command received by said interface is the first storage subsystem;

a command downstream sending unit which sends said status information acquisition command to said third storage subsystem and connected to the first storage subsystem, when said target storage subsystem judgment unit judges that the first storage subsystem is not said target storage subsystem from which said status information is to be acquired;

a self status information acquisition unit which acquires the status information of the first storage subsystem and which stores the acquired status information to be sent to the second storage subsystem into said outgoing status information storage unit, when said target storage subsystem judgment unit judges that the first storage subsystem is said target storage subsystem from which said status information is to be acquired; and

a downstream status information acquisition unit which receives the status information from said third storage subsystem and which stores the received status

information to be sent to the second storage into said outgoing status information storage unit,

wherein, after said self status information acquisition unit or said downstream status information acquisition unit stores said status information into said outgoing status information storage unit, said interface sends said stored status information.

14. (Previously Presented) A first storage subsystem according to Claim 13, further comprising:

a concatenation position judgment unit which judges a concatenation position of the first storage subsystem based on information stored in said status information acquisition command received from said upstream storage subsystem,

wherein when said concatenation position judgment unit judges that the first storage subsystem is a storage connected to said host computer, then, said interface sends the status information stored in said status information storage unit to said host computer.

15. (Previously Presented) A first storage subsystem according to Claim 14, wherein when said target storage subsystem judgment unit judges that said target storage subsystem is all of said plurality of storage subsystems including the storage subsystem sequentially concatenated from said host computer, and said concatenation position judgment unit judges that the first storage subsystem is not a

storage subsystem concatenated at a farthest position relative to said host computer among said plurality of storage subsystems sequentially concatenated, then, said command downstream sending unit sends said status information acquisition command to the third storage subsystem connected to the storage subsystem,

wherein said self status information acquisition unit adds the acquired status information of the first storage subsystem to the status information that is received by said downstream status information acquisition unit from said third storage subsystem and stored in said outgoing status information storage unit, and then, said self status information acquisition unit stores resultant status information to be sent to the second storage into said outgoing status information storage unit, and

wherein after said self status information acquisition unit stores said status information into said outgoing status information storage unit, said interface sends said status information.

16. (Previously Presented) A storage subsystem according to Claim 15, wherein when said target storage subsystem judgment unit judges that said target storage subsystem is all of said plurality of storage subsystems including the storage subsystem sequentially concatenated from said host computer, and said concatenation position judgment unit judges that the first storage subsystem is not the storage subsystem concatenated at a farthest position seen from said host computer among said plurality of storage subsystems sequentially concatenated,

then, said command downstream sending unit instructs said self status information acquisition unit to acquire the status information of the first storage subsystem and to store the acquired status information to be sent to the second storage into said outgoing status information storage unit.

17. (Previously Presented) A storage subsystem according to Claim 16, further comprising:

an acquired information judgment unit which judges whether status information whose acquisition is requested by the status information acquisition command received is newest status information,

wherein when said acquired information judgment unit judges that the newest status information is not requested, said concatenation position judgment unit judges that the first storage subsystem is a storage subsystem, and said outgoing status information storage unit holds the status information, then, said interface sends the held status information to the host computer without waiting for said self status information acquisition unit or said downstream status information acquisition unit to store status information into said outgoing status information storage unit.

18. (Currently Amended) In a computer system which includes a plurality of storage subsystems that ~~are sequentially concatenated to a host computer and~~

performs a remote copy between two or more of said plurality of storage subsystems, a first storage subsystem comprising:

an interface which receives a status information acquisition command and which sends status information from and to a second storage subsystem that is located on a nearer side of the storage subsystem relative to ~~the~~ a host computer and is connected to the first storage subsystem, said status information including a data transfer rate of copying data between a first logical volume and a second logical volume of said first storage subsystem ~~or~~ and at least one third storage subsystem located on a farther side of the storage subsystem relative to the host computer, said data transfer rate being used to determine, by said host computer, which of at least one of a plurality of status information acquisition command routes is displayed on said host computer, said status information acquisition command routes being routes on which a status information acquisition command is relayed via one or more of said plurality of storage subsystems;

an outgoing status information storage unit which stores said status information to be sent to said second storage subsystem;

a concatenation position judgment unit which judges a concatenation position of the first storage subsystem based on information stored in said status information acquisition command received from said second storage subsystem; and

a status information acquisition unit,

wherein said status information acquisition unit acquires the status information of the first storage subsystem at status information acquisition time intervals stored in the status information acquisition command, to store the acquired status information into the outgoing status information storage unit, when said concatenation position judgment unit judges that the first storage subsystem is a storage subsystem located at a farthest position in concatenation order relative to the host computer; and

wherein said status information acquisition unit acquires the status information of the storage subsystem at a time of receiving status information from said third storage subsystem and adds the status information of the first storage subsystem to the received status information of said third storage subsystem, to store resultant status information to the status information storage unit, and

wherein when the concatenation position judgment unit judges that the storage subsystem in question is not a storage subsystem connected directly to the host computer, then, said interface sends all of said status information stored in the status information storage unit to said upstream storage subsystem.

19. (Currently Amended) A computer system comprising:

a plurality of storage subsystems in which ~~are sequentially concatenated to a host computer and a~~ remote copy is performed between two or more of said plurality of storage subsystems,

wherein a first storage subsystem comprising:

a cache memory which temporarily stores data sent from ~~said a~~ host computer,

an interface which receives status information acquisition command and which sends status information to a second storage subsystem that is located on a nearer side of the first storage subsystem relative to the host computer and is connected to the first storage subsystem, said status information including a cache usage rate, which indicates a usage rate of said cache memory of said first storage subsystem or at least one cache memory of at least one third storage subsystem that is located on a farther side of first storage subsystem relative to the host computer and connected to first storage subsystem, said cache usage rate being used to determine, by said host computer, which of at least one of a plurality of status information acquisition command routes is displayed on said host computer, said status information acquisition command routes being routes on which a status information acquisition command is relayed via one or more of said plurality of storage subsystems,

an outgoing status information storage unit which stores said status information to be sent to said second storage subsystem,

a target storage subsystem judgment unit which judges whether a target storage subsystem identified in the status information acquisition command received through said interface is the first storage subsystem,

a command downstream sending unit which sends said status information acquisition command to said third storage subsystem, when said target storage



subsystem judgment unit judges that the first storage subsystem is not said target storage subsystem from which said status information is to be acquired,

a self status information acquisition unit which acquires the status information of the storage subsystem and which stores the acquired status information to be sent to the second storage subsystem into said ongoing status information storage unit, when said target storage subsystem judgment unit judges that the first storage subsystem is said target storage subsystem from which said status information is to be acquired, and

a downstream status information acquisition unit which receives the status information from said third storage subsystem and which stores the received status information to be sent to the second storage into said outgoing status information storage unit,

wherein after said self status information acquisition unit or said downstream status information acquisition unit stores said status information into said outgoing status information storage unit, said interface sends said status information stored in said outgoing status information storage unit;

wherein said host computer comprises:

a status information acquisition command generation unit which generates said status information acquisition command,

a status information acquisition unit which receives status information from said plurality of storage subsystems, and

a remote copy adjustment unit which generates information for adjusting a remote copy according to said status information held in said status information holding unit.

20. (Currently Amended) In a computer system which includes a plurality of storage subsystems ~~being sequentially concatenated to a host computer and performs performing a~~ remote copy between two or more of said storage subsystems, a status information acquisition method for acquiring status information of a plurality of storage subsystems comprising:

a command receive step in which a first storage subsystem receives a status information acquisition command from a second storage subsystem that is connected to and located on a nearer side of the first storage subsystem relative to ~~the a~~ host computer, said status information acquisition command being used to require a status information included a cache usage rate, which indicates a usage rate of a cache memory of said first storage subsystem or at least one third storage subsystem, which is connected to and located on a farther side of the first storage subsystem relative to the host computer, for performing a remote copy of data between a first logical volume and a second logical volume of said first storage subsystem ~~or and~~ said third storage subsystem, said cache usage rate being used to determine, by said host computer, which of at least one of a plurality of status information acquisition command routes is displayed on said host computer, said

status information acquisition command routes being routes on which a status information acquisition command is relayed via one or more of said plurality of storage subsystems;

a target storage subsystem judgment step in which the first storage subsystem analyzes the received status information acquisition command, to judge whether the first storage subsystem is a target storage subsystem from which status information is to be acquired based on said status information acquisition command; and

a status information acquisition/sending step including the sub-steps of:

when it is judged in said target storage subsystem judgment step that the first storage subsystem is the target storage subsystem, then, acquiring, by the first storage subsystem, the status information of the first storage subsystem and sending the acquired status information to said second storage subsystem, and

when it is judged in said target storage subsystem judgment step that the storage subsystem is not the target storage subsystem, then, sending, by the first storage subsystem, the status information acquisition command received in said command receiving step to said third storage subsystem, and thereafter, when status information of said third storage subsystem is received from the third storage subsystem, sending, by the first storage subsystem, the received status information to the second storage subsystem.

21. (Currently Amended) In a computer system which includes a plurality of storage subsystems being sequentially concatenated in a sequence, a status information acquisition method for acquiring status information of said subsystems comprising:

a command receiving step in which a first storage subsystem receives a status information acquisition command from a second storage subsystem that is connected to and located on a nearer side of the first storage subsystem relative to ~~the~~ a host computer, said status information acquisition command being used to require a status information included a copy progress rate, which indicates a concordance rate of data between a first logical volume and a second logical volume of said first storage subsystem ~~or~~ and at least one third storage subsystem connected to and located on a farther side of the first storage subsystem relative to the host computer, said copy progress rate being used to determine, by the host computer, which of at least one of a plurality of status information acquisition command routes is displayed on the host computer, said status information acquisition command routes being routes on which a status information acquisition command is relayed via one or more of said plurality of storage subsystems;

a self position judgment step in which the storage subsystem analyzes the received status information acquisition command and judges whether the first storage subsystem is a third storage concatenated at a farthest position in said sequence relative to the host computer; and

a status information acquisition/sending step including the sub-steps of:

when it is judged in said self position judgment step that the first storage subsystem is the end storage subsystem, then, acquiring, by the first storage subsystem, the status information of the first storage subsystem and sending the acquired status information to second subsystem connected to the first storage subsystem, and

when it is judged that the first storage subsystem is not the end storage subsystem, then, sending, by the first storage subsystem, the status information acquisition command received in said command receiving step to said third storage subsystem, and thereafter, when status information is received from said third storage subsystem, adding, by the first storage subsystem, the status information of the first storage subsystem to the status information received from the third storage subsystem to obtain new status information, and sending the new status information to the second storage subsystem.

22. (Currently Amended) In a computer system which includes a plurality of storage subsystems ~~being sequentially concatenated to a host computer and performs performing a remote-copy between~~ at least one of said plurality of storage subsystems, a status information monitoring method for monitoring remote copy status of at least one of the storage subsystems sequentially concatenated to

first storage ~~subsystems~~ subsystem directly coupled to a host computer, said status information monitoring method comprising the steps of:

generating a status acquisition command for acquiring, at regular time intervals, status information of ~~all~~ the storage subsystems constituting a specific sequence connected to the host computer, said status information including a data transfer rate of copying data between a plurality of logical volumes of at least one of said the storage subsystems, said data transfer rate being used to determine, by the host computer, which of at least one of a plurality of status acquisition command routes is displayed on the host computer, said status acquisition command routes being routes on which a status acquisition command is relayed via one or more of said storage subsystems;

sending the generated status acquisition command to the first storage subsystem;

receiving the sent status acquisition command in the first storage subsystem;

when the received status acquisition command is a command for acquiring the status information of the sequence to which the first storage subsystem belongs, sending the status acquisition command to a second storage subsystem connected to the first storage subsystem;

sending the received command at said second storage subsystem to a third storage subsystem connected at an end farthest from the host computer;

acquiring said status information to be sent to the second storage subsystem connected to the third storage system according to the received status acquisition command, in the third storage system connected at the end;

judging, in the third storage subsystem, whether or not the storage subsystem is the first storage subsystem;

when it is judged that the storage subsystem is not the first storage subsystem, sending the status information of the third storage subsystem from the third storage subsystem to the second storage subsystem;

receiving, in the second storage subsystem, the status information of the third storage subsystem;

adding, in the second storage subsystem, the status information of the second storage subsystem to the received status information of the third storage subsystem;

judging, in the second storage subsystem, whether or not the storage subsystem is the first storage subsystem,

when it is judged that the storage subsystem is not the first storage subsystem, sending the received status information of the third storage subsystem and the second storage subsystem from the second storage subsystem to the first storage subsystem;

receiving, in the first storage subsystem, the status information of the third storage subsystem and the second storage subsystem;

adding, in the first storage subsystem, the status information of the first storage subsystem to the received status information of the third storage subsystem and the second storage subsystem;

judging, in the first storage subsystem, whether or not the storage subsystem is the first storage subsystem;

when it is judged that the storage subsystem is the first storage subsystem, holding resultant status information;

generating, in the host computer, a status information acquisition command for acquiring status information of all the storage subsystems constituting a specific sequence connected to the host computer;

sending, in the host computer, the generated status information acquisition command to said first storage subsystem;

receiving, in the first storage subsystem, the sent status information acquisition command;

sending, from the first storage subsystem, the resultant status information held by the first storage subsystem to the host computer when a sequence designated by said command as a sequence from which status information is to be acquired is a sequence to which the first storage subsystem belongs; and

receiving the sent status information in the host computer; and



displaying, in the host computer, at least one of said plurality of status acquisition command routes determined by the host computer based on using said data transfer rate.

23. (Currently Amended) In a computer system which includes a plurality of storage subsystems ~~which are sequentially concatenated to a host computer and~~ performs a remote copy between two or more of said plurality of storage subsystems, a first storage subsystem comprising:

a memory; and

a processor which receives a status information acquisition command from a second storage subsystem that is located on a nearer side of the first storage subsystem ~~seen from the a host computer and is~~ connected to the first storage subsystem, judges whether a target storage subsystem from which said status information to be acquired specified in said status information acquisition command is the first storage subsystem, sends said status information acquisition command to a third storage subsystem that is located on a farther side of the first storage subsystem, when it is judged that the first storage subsystem is said target storage subsystem from which said status information is to be acquired, receives the status information into said memory, and sends the status information stored in said memory to said second storage subsystem;

wherein said status information includes a cache usage rate, which indicates a usage rate of a cache memory of said third storage subsystem; and  
wherein the cache usage rate being used to determine, by the host computer, which of at least one of a plurality of status information acquisition command routes is displayed on the host computer, the status information acquisition command routes being routes on which a status information acquisition command is relayed via one or more of the plurality of storage subsystems.

24. (Currently Amended) A computer system comprising:

a plurality of storage subsystems in ~~which are sequentially concatenated to a host computer and a~~ remote copy is performed between two or more of said plurality of storage subsystems,

wherein a first storage subsystem comprises:

a cache memory temporarily storing data sent from said host computer;

an interface which receives a status information acquisition command and sends status information from and to a second storage subsystem that is located on a nearer side of the first storage subsystem ~~seen from the~~ a host computer and is connected to the first storage subsystem, said status information including a cache usage rate, which indicates a usage rate of said cache memory of said first storage subsystem or at least one cache memory of at least one third storage subsystem, which is connected to and located on a farther side of the storage subsystem in

question seen from the host computer, for performing a copy of data between a first logical volume and a second logical volume of said first storage subsystem ~~or~~ and said third storage subsystem, said cache usage rate being used to determine, by the host computer, which of at least one of a plurality of status information acquisition command routes is displayed on the host computer, the status information acquisition command routes being routes on which a status information acquisition command is relayed via one or more of the plurality of storage subsystems,

an outgoing status information storage unit which stores said status information to be sent to said second storage subsystem,

a concatenation position judgment unit which judges a concatenation position of the first storage subsystem based on information stored in said status information acquisition command received from said second storage subsystem, and

a status information acquisition unit which acquires status information of the first storage subsystem at status information acquisition time intervals stored in the status information acquisition command, to store the acquired status information into the outgoing status information storage unit, when said concatenation position judgment unit judges that the first storage subsystem is a storage subsystem located at a farthest position in concatenation order seen from the host computer and acquires status information of the storage subsystem at a time of receiving status information from said third storage subsystem, and which adds the status information of the first storage subsystem to the received status information of said third storage

subsystem, to store resultant status information to the status information storage unit,

wherein when the concatenation position judgment unit judges that the first storage subsystem is not a storage subsystem connected directly to the host computer, then said interface sends said status information stored in the status information storage unit to said upstream storage subsystem, and

wherein said host computer comprises:

a status information acquisition command generation unit which generates a status information acquisition command,

a status information acquisition unit which receives status information from said plurality of storage subsystems,

a status information holding unit which holds the status information acquired by said status information acquisition unit, and

a remote copy adjustment unit which generates information for adjusting said remote copy according to said status information held in said status information holding unit;

wherein the host computer displays at least one of the plurality of status acquisition command routes determined by the host computer based on using said cache usage rate.

25. (Currently Amended) A storage system, comprising:

a first storage device coupled to an information processing device and having a first controller and a plurality of first disk drives, at least one of said first disk drives being related to a first logical volume;

said first controller receiving data, which are sent from said information processing device ~~interface~~ and targeted to said first logical volume, and storing said data received from said information processing device into said at least one of said first disk drives;

a second storage device coupled to said first storage device and having a second controller and a plurality of second disk drives, said second disk drives being related to a second logical volume and a third logical volume-; and

said second controller receiving data targeted to said second logical volume and storing said data targeted to said second logical volume into said second disk drives;

wherein said first controller receives a command from said information processing device and transfers said command to said second storage device, said command being used to request a copy progress rate, which indicates a concordance rate of data between said second logical volume and said third logical volume of said second storage device, said copy progress rate being used to determine, by said information processing device, which of at least one of a plurality of command routes is displayed on said information processing device, said

command routes being routes on which a command is relayed via one or more storage devices, and

wherein said second controller receives said command from said first storage device and replies said copy progress rate based on said command.

26. (Currently Amended) A storage system, comprising:

a first storage device coupled to an information processing device and having a first controller and a plurality of first disk drives, at least one of said first disk drives being related to a first logical volume;

said first controller having a first communication interface coupled to said information processing device, a first disk interface coupled to said first disk drives and a first cache memory coupled to both said first communication interface and said first disk interface, ~~and~~ said first controller receiving data, which are sent from said information processing device ~~interface~~ and targeted to said first logical volume, via said first communication interface and temporarily storing said data received from said information processing device into said first cache memory and transferring said data stored in said first cache memory to said at least one of said first disk drives via said first disk interface;

a second storage device coupled to said first storage device and having a second controller and a plurality of second disk drives, at least one of said second disk drives being related to a second logical volume;

said second controller having a second communication interface, a second disk interface coupled to said second disk drives and a second cache memory coupled to both said second communication interface and said second disk interface, ~~and~~ said second controller temporarily storing data, which are received via said second communication interface and targeted to said second logical volume, into said second cache memory and transferring said data stored in said second cache memory to said at least one of said second disk drives via said second disk interface; and

a third storage device coupled to said second storage device and having a third controller and a plurality of third disk drives, at least one of said third disk drives being related to a third logical volume; and

said third controller having a third communication interface, a third disk interface coupled to said third disk drives and a third cache memory coupled to both said third communication interface and said third disk interface, ~~and~~ said third controller temporarily storing data, which are received via said third communication interface and targeted to said third logical volume, into said third cache memory and transferring said data stored in said third cache memory to said at least one of said third disk drives via said third disk interface;

wherein said first controller receives a command from said information processing device and transfers said command to said second storage device, said command being used to request a copy progress rate, which indicates a

concordance rate of data between said second logical volume of said second storage device and said third logical volume of said third storage device, said copy progress rate being used to determine, by said information processing device, which of at least one of a plurality of command routes is displayed on said information processing device, said command routes being routes on which a command is relayed via one or more storage devices, and

wherein said second controller receives said command from said first storage device and replies said copy progress rate based on said command.

27. (Currently Amended) A storage system, comprising:

a first storage device coupled to an information processing device and having a first controller and a plurality of first disk drives, at least one of said first disk drives being related to a first logical volume;

said first controller receiving data, which are sent from said information processing device ~~interface~~ and targeted to said first logical volume, and storing said data received from said information processing device into said at least one of said first disk drives;

a second storage device coupled to said first storage device and having a second controller and a plurality of second disk drives, said second disk drives being related to a second logical volume and a third logical volume; and



said second controller receiving data targeted to said second logical volume and storing said data targeted to said second logical volume into ~~said~~ at least one of said second disk drives corresponding to said second logical volume; and

wherein said first controller receives a command from said information processing device and transfers said command to said second storage device, said command being used to request a data transfer rate of copying data between said second logical volume and said third logical volume of said second storage device ~~by a copy process~~, said data transfer rate being used to determine, by said information processing device, which of at least one of a plurality of command routes is displayed on said information processing device, said command routes being routes on which a command is relayed via one or more storage devices, and

wherein said second controller receives said command from said first storage device and replies said data transfer rate based on said command.

28. (Currently Amended) A storage system, comprising:

a first storage device coupled to an information processing device and having a first controller and a plurality of first disk drives, at least one of said first disk drives being related to a first logical volume;

said first controller having a first communication interface coupled to said information processing device, a first disk interface coupled to said first disk drives and a first cache memory coupled to both said first communication interface and said

first disk interface, ~~and~~ said first controller receiving data, which are sent from said information processing device interface and targeted to said first logical volume, via said first communication and temporarily storing said data received from said information processing device into said first cache memory and transferring said data stored in said first cache memory to said at least one of said first disk drives via said first disk interface;

a second storage device coupled to said first storage device and having a second controller and a plurality of second disk drives, at least one of said second disk drives being related to a second logical volume;

said second controller having a second communication interface, a second disk interface coupled to said second disk drives and a second cache memory coupled to both said second communication interface and said second disk interface, ~~and~~ said second controller temporarily storing data, which are received via said second communication interface and targeted to said second logical volume, into said second cache memory and transferring said data stored in said second cache memory to said at least one of said second disk drives via said second disk interface; and

a third storage device coupled to said second storage device and having a third controller and a plurality of third disk drives, at least one of said third disk drives being related to a third logical volume; and

said third controller having a third communication interface, a third disk interface coupled to said third disk drives and a third cache memory coupled to both said third communication interface and said third disk interface, ~~and~~ said third controller temporarily storing data, which are received via said third communication interface and targeted to said third logical volume, into said third cache memory and transferring said data stored in said third cache memory to said at least one of said third disk drives via said third disk interface;

wherein said first controller receives a command from said information processing device and transfers said command to said second storage device, said command being used to request a data transfer rate of copying data between said second logical volume of said second storage device and said third logical volume of said third storage device by a remote copy process, said data transfer rate being used to determine, by said information processing device, which of at least one of a plurality of command routes is displayed on said information processing device, said command routes being routes on which a command is relayed via one or more storage devices, and

wherein said second controller receives said command from said first storage device and replies said data transfer rate based on said command.

29. (Currently Amended) A storage system, comprising:

a first storage device coupled to an information processing device and having a first controller and a plurality of first disk drives, at least one of said first disk drives being related to a first logical volume;

said first controller receiving data, which are sent from said information processing device ~~interface~~ and targeted to said first logical volume, and storing said data received from said information processing device into said at least one of said first disk drives;

a second storage device coupled to said first storage device and having a second controller and a plurality of second disk drives, at least one of said second disk drives being related to a second logical volume; and

said second controller having a communication interface, a disk interface coupled to said second disk drives and a cache memory coupled to both said communication interface and said disk interface, ~~and~~ said second controller receiving data targeted to said second logical volume and temporarily storing said data targeted to said second logical volume into said cache memory and transferring said data stored in said cache memory to said at least one of said second disk drives via said second disk interface;

wherein said first controller receives a command from said information processing device and transfers said command to said second storage device, said command being used to request a cache usage rate, which indicates a usage rate of said cache memory of said second controller, said cache usage rate being used to

determine, by said information processing device, which of at least one of a plurality of command routes is displayed on said information processing device, said command routes being routes on which a command is relayed via one or more storage devices, and

wherein said second controller receives said command from said first storage device and replies said cache usage rate based on said command.

30. (Currently Amended) A storage system, comprising:

a first storage device coupled to an information processing device and having a first controller and a plurality of first disk drives, at least one of said first disk drives being related to a first logical volume;

said first controller having a first communication interface coupled to said information processing device, a first disk interface coupled to said first disk drives and a first cache memory coupled to both said first communication interface and said first disk interface, ~~and~~ said first controller receiving data, which are sent from said information processing device ~~interface~~ and targeted to said first logical volume, via said first communication interface and temporarily storing said data received from said information processing device into said first cache memory and transferring said data stored in said first cache memory to said at least one of said first disk drives via said first disk interface;

a second storage device coupled to said first storage device and having a second controller and a plurality of second disk drives, at least one of said second disk drives being related to a second logical volume;

said second controller having a second communication interface, a second disk interface coupled to said second disk drives and a second cache memory coupled to both said second communication interface and said second disk interface, and said second controller temporarily storing data, which are received via said second communication interface and targeted to said second logical volume, into said second cache memory and transferring said data stored in said second cache memory to said at least one of said second disk drives via said second disk interface; and

a third storage device coupled to said second storage device and having a third controller and a plurality of third disk drives, at least one of said third disk drives being related to a third logical volume; and

said third controller having a third communication interface, a third disk interface coupled to said third disk drives and a third cache memory coupled to both said third communication interface and said third disk interface, and said first controller temporarily storing data, which are received via said third communication interface and targeted to said third logical volume, into said third cache memory and transferring said data stored in said third cache memory to said at least one of said third disk drives via said third disk interface;

wherein said first controller receives a command from said information processing device and transfers said command to said second storage device, said command being used to request a cache usage rate, which indicates a usage rate of said second cache memory of said second controller for performing a remote copy of data between said second logical volume and said third logical volume, said cache usage rate being used to determine, by said information processing device, which of at least one of a plurality of command routes is displayed on said information processing device, said command routes being routes on which a command is relayed via one or more storage devices,

wherein said second controller receives said command from said first storage device and replies said cache usage rate based on said command.

31. (Currently Amended) A storage system, comprising:

a first storage device coupled to an information processing device and having a first controller and a plurality of first disk drives, at least one of said first disk drives being related to a first logical volume;

said first controller receiving data, which are sent from said information processing device ~~interface~~ and targeted to said first logical volume, and storing said data received from said information processing device into said at least one of said first disk drives;

a second storage device coupled to said first storage device and having a second controller and a plurality of second disk drives, ~~at least one of said second disk drives~~ being related to a second logical volume and a third logical volume; and

said second controller receiving data targeted to said second logical volume and storing said data targeted to said second logical volume into ~~said at least one of said second disk drives~~ corresponding to said second logical volume;

wherein said first controller receives a first command from said information processing device and transfers said first command to said second storage device, said first command being used to request a copy status of between said second logical volume ~~of said second storage device~~ and said third logical volume of said ~~third second~~ storage device,

wherein said second controller receives said first command from said first storage device and replies said copy status based on said first command, and

wherein said first controller receives a second command from said information processing device and transfers said second command to said second storage device, said second command being used to request a configuration information, which indicates a configuration of one or more resources of said second device, or a log information of said second storage device, said configuration information or said log information being used to determine, by said information processing device, which of at least one of a plurality of command routes is displayed on said



information processing device, said command routes being routes on which a  
command is relayed via one or more storage devices, and

wherein said second controller receives said second command from said first  
storage device and replies said configuration information or said log information  
based on said second command.